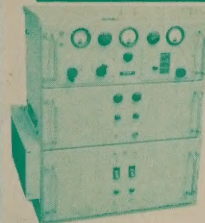


## 400 W AM TRANSMITTER



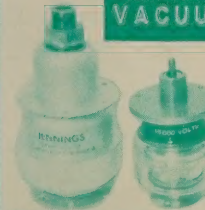
**T-368/URT TRANSMITTER**, 1.5 to 20 Mhz @ 450 watts CW, 400 watts AM. Uses master oscillator, frequency multiplier, intermediate power amp, and final power amp. Also 4-400A tube in the modulator, 1500 pf and 300 pf 10 KV vacuum variable capacitors in P-A. Input signal levels: 3-5 volts FSK, 30 V max external excitation. Input impedance: 56 ohms FSK, 1000 ohms external. Requires 115 VAC 50-60 Hz 1570 W (CW) or 2200 W (AM). 41x32x31, 650 lbs net. Sh wt: 940 lbs in wood crate as received from government. Used-good condition but not checked, \$495.00. Maintenance manual, partial repro, \$15.00. BC-939/TN-339 ANTENNA TUNER, as used with T-368 or BC-610 transmitters. Has three variable inductors, two 100-turn counters, one 10-turn counter, 0-15 RF ammeter, and two fixed vacuum capacitors. 11x14x23, 85 lbs sh wt. Government reconditioned, \$100.00.

## 4 TO 405 MHZ GENERATOR

**SG-117/URM-26B SIGNAL GENERATOR**, 4.0 to 405.0 Mhz AM-CW-pulse in six bands. Compact unit has 0.1 to 100K u-volt output @ 50 ohms. Modulation 400 or 1000 Hz 0-50%. External pulse-mod requires positive 40 V min., 50-5000 pps; duration 2-40 u-sec and 70 ohm input impedance. Requires 115 VAC 50-1000 Hz. 11x14x10, 36 lbs sh wt. Used, reparable, \$175.00. Checked, \$225.00; Manual, partial repro, \$10. **ACCESSORIES** sold only w/purchase of URM-26B: CN-315 2:1 attenuator, 50 ohms, \$6.00. CN-315 10:1 50 ohm, \$7.50. CN-471 10:1 70 ohm, \$8. CU-439 impedance matcher, \$7.50. BNC cords, 4 ft, \$1.25; 6", \$1.00.



## VACUUM VARIABLES



**JENNINGS VACUUM VARIABLE CAPACITORS** removed from unused equipment: #CADA-600, 600 pf 10 KV; ceramic type with hex nut drive. 6 1/2" lg X 3 1/2" dia; 5 lbs sh. \$105.00. #UCSV-110, 110 pf 10 KV; 4 1/2"x2 1/2", 3 lbs. \$75.00. #UCSV-250-7.5, 250 pf 7.5 KV; 3 lbs. \$80.00. #UCSV-250-10, 250 pf 10 KV; 3 lbs. \$90.00. **JENNINGS FIXED VACUUM CAPACITORS**, removed: #JCSF-210-7.5, 210 pf 7.5 KV, \$8.00 each. #JCSF-40-10, 40 pf 10 KV, \$6.00 each.

## HAMMARLUND SP-600

**HAMMARLUND SP-600-JX RECEIVER**, 0.54 to 54.0 Mhz AM, CW, MCW; 455 Khz final I-F. Selectivity from 0.2 to 13.0 Khz in six steps plus crystal phasing control on three lowest steps. Frequency selection using VFO or six preset crystal channels. Also BFO, calibrated "S" meter, and AVC. Audio output impedance: 600 ohms. 30-239 connector for antenna; includes 20 tubes. 115/230 VAC 50-60 Hz required. 10x19x16, 76 lbs sh wt. Used-reparable, \$215. Checked, \$285. Manual for SP600-JX, partial repro, \$10.00. Cabinet for SP-600; 30 lbs, used, \$32.50.



## R-388/URR RECEIVER

**R-388/URR RECEIVER**, 0.5 to 30.5 Mhz AM-CW in thirty bands, 1 Mhz per band. Wide 6" linear scale permits precise tuning in megacycles or kilocycles. Has five step crystal selectivity, calibrated "S" meter, and calibration points every 100 Khz. 500 Khz IF; bandwidth 0.2 to 6 Khz. Audio output: 1.5 watts into 4 or 600 ohms. 50 ohm antenna input impedance. Requires 115/230 VAC 50-60 Hz. 10x19x13, 55 lbs sh wt. Used, reparable, \$325.00; Checked, \$400. Manual, partial repro, \$10.00.

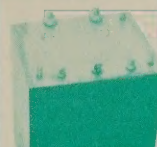


## 1125-1350 MHZ CAVITY

**MK304/TPS-1D CAVITY PRESELECTION** for the 1125-1350 Mhz range. Has three silver-plated cavities with 56-turn frequency adjust. Each cavity 4 1/2"x2 1/2"; mid-one shares two sides with outside ones. Requires type N connectors. 0/a 12x9 1/2"x3, 10 lbs sh. Unused, \$29.95.



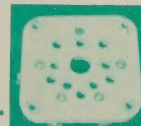
## 2000 VCT 500 MA



**HV TRANSFORMER** with secondary of 2000 VCT 500 MA (700 ma intermittent) from input of 115 VAC 50-60 Hz. 7x5 1/2"x5, 32 lbs sh wt. #HW-201-P, \$30.

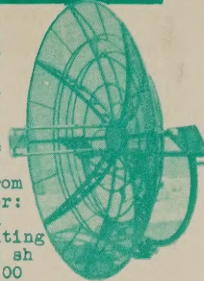
## 4-400A SOCKET

**JOHNSON #275 TUBE SOCKET** for 4-125A, 4-250A & 4-400A power amp tubes. 2-7/8" sq.; ceramic. 1 lb. Removed f/equip., \$6.50.



## 8 FOOT DISH ANTENNA

**AS-554/TRC 8' dia ANTENNA** with aluminum mesh paraboloid surface. Designed for 1700-2400 Mhz with 30 db gain; 4.5 bandwidth. Vertical or horizontal polarization; 20 db major to minor lobe ratio. Distance from focal point to window of feedhorn: 36". Depth from surface perimeter to center: 16". Antenna is shipped in sections and includes mounting yoke and feedhorn. 600 lbs sh weight approx. Used, \$525.00.



## LF WEATHER MONITOR

**"WEATHER SENTRY" VLF CONVERTER**, designed to monitor aviation weather broadcasts when used with an AM car radio. Slug-tuned single channel frequency in the 200-400 Khz range. Has three transistor circuit which requires a 9 VDC transistor battery (not supplied). With tuning tool, bracket, and 43" cable to connect to car radio antenna. No further data. 5x4x1 1/2, 3 lbs sh. #WSA-LF20, unused, \$8.95.



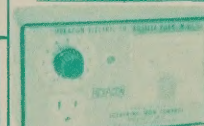
## 'SPACE TOY' MODULE

**SPACE WARRIOR MODULE**, electronic toy with motor speed and shooting sound effects with flashing LED's. Firing of infra-red LED is detected on aggressor module causing "hit" effects and an inactive period. Requires 9 VDC transistor battery. Sold AS-IS, may have cold solder joints or other problem. 6 1/2"x2 1/2"x1 1/2, 2 lbs sh. #SPW-MOD, \$3.95 each; 2 for \$6.50. **CIRCUIT BOARD** only from above module, AS-IS; #SPW-PCB, \$2.50 each or 3 for \$6.00.



## SOLDERING IRON CONTROL

**HEXACON SOLDERING IRON CONTROL**, solid-state unit allows consistent temperature settings for soldering. Has 0-150 VAC meter 0-10 scaled on-linear variable resistor voltage control. 3-conductor cord; 120 VAC 300 watts max. 3 1/2"x6 1/2"x2 1/2, 4 lbs. HEX-TCS71, NEW, \$12.95.



**Fair Radio Sales Co.**

1016 E. EUREKA ST.

P. O. BOX 1105

*Lima, Ohio*

45802-1105

PHONE: 419/227-6573



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## WS-81 CATALOG SUPPLEMENT

### R-174/GRR RECEIVER

**R-174/GRR-5 RECEIVER**, 1.5 to 18 Mhz AM-CW in four bands continuously tuned or 10 preset channels; 455 Khz I-F and 200 Khz crystal calibrator. Requires 90 VDC and 1.5 VDC which was originally supplied by PP-308 power supply (not available). Has 8 or 600 ohm output, BFO, and tubes 3V4, 3/1R5, 3/11A, and 1U5. As shown; no outer case. 5 1/2"x12x8, 23 lbs sh wt. Used, not checked, \$18.95; MANUAL, \$7.50. 115 VAC SUPPLY w/speaker, our construction, \$27.00. 11-pin POWER/AUDIO CONNECTOR, \$2.50 w/set purchase.



**PRICES ARE F.O.B. LIMA  
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USE YOUR MASTERCARD OR VISA.  
STORE HOURS: Monday thru Friday 9 to 5:30  
Saturday 9 to 1:00**



## PRINTER COMPONENT Sale

180 CPS MATRIX PRINTER COMPONENTS described on page 34 of WS-81 Catalog--SALE PRICED:  
 #MM-MI2 Printer Mechanism, new \$25 \$99.50  
 #217E-238 Programmable Interface PCB w/8080A 8251, 2-8255, 8224, MC14411, etc. \$85 \$65.  
 #217D-242 Carriage-Ribbon PCB, \$16.95 \$14.95  
 #217D-245 Paper Feed/Head Drvr., \$18.95 \$16.  
 #217D-244 Controller CPU w/8085, \$100 \$80.  
 #217D-246 Processor CPU w/8085, \$75 \$59.50



MI2 DESIGN 2400 MATRIX PRINTER, 180 cps bidirectional; 0-132 or 0-158 columns, 96 character set plus elongated print feature. Units are sold "AS-IS, repairs required/no documentation." 175 lbs sh. Used, as-is, \$400.00; As-is, less printhead, \$300.00  
 PRINTER EXERCISER for the above printer; selectable baud rates from 50 to 9600. Uses 8080A, 8255A, 8251, 8224, 8228, & 4/2708's. In transit case; 8 lbs sh. \$100.00

## IC CLOSEOUT

8080A CPU, \$4.95 \$3.50  
 C8008 CPU, \$9.95 \$5.00  
 P8095 CPU, \$12.95 \$9.  
 8205 \$8 \$1.50 8212 \$1.75 \$1. 2111 \$2 \$2.  
 2114 \$4.95 \$3.25 4804A \$6 \$3. 3341 \$2 \$2.50

## SPECIAL SALE VTMH!

VACUUM TUBE VOLTMETERS at reduced prices due to special quantity purchase. All are used.

TS-505/U, ranges 0 to 2.5, 5-10-25-50-100-250-500 Vrms plus 1000 VDC scale. Also X1 thru X1 Megohm ranges. Response: 30 Hz to 5 Mhz. With AC, DC, and ohm probes. 9 1/2 x 9 1/2, 17 lbs. Repairable \$45. NOW \$25. Checked, \$40. \$45.  
 500 Mhz probe \$10 w/purchase Manual, partial repro, \$8.50

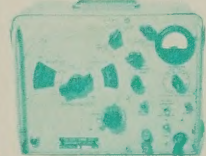


HEWLETT-PACKARD 410B, features 20 Hz to 700 Mhz response with full scale ranges 1-3-10-30-100 and 300 Vrms plus 1000 VDC. Resistance scales X1 thru X1 Meg. High frequency AC probe has EA53/2-01C tube. 11 1/2 x 7 1/2 x 8 1/2, 15 lbs sh. Repairable, \$59-50 NOW \$59.50  
 Checked, \$109-50. NOW \$85.00 Manual, \$8.50 with set purchase.

ME-180/USM-116, similar electronically to the HP-410B, set has added 0.02 to 1000 MA DC feature. Response to 100 Mhz with AC probe and to 700 Mhz with optional T-connector accessory. AC probe uses 6923/EA52 tube. 7 x 8 1/2 x 9, 21 lbs sh. Repairable, \$55. Checked, \$90. \$65.00  
 T-connector, \$10 w/set. Manual, par-repro \$10



## 10 KHZ TO 50 MHZ



AN/URM-25F SIGNAL GENERATOR, covers 10 KHz to 50 Mhz AM in nine bands. RF output: 0.1 to 100K microvolts into 50 ohms; 2 V adjustable across high load impedance. Modulation 0-50%, 400 or 1000 Hz internal. 1 Mhz calibrator; designed accuracy ±0.05% above 10 Mhz  
 Requires 115 VAC 50-100 Hz. 11 1/2 x 14 x 10 1/2, 44 lbs. Used, repairable, \$145. Checked, \$210.00

ACCESSORIES available w/purchase of URM-25F: BOCK-partial repro, \$10. DA-109 Dummy Load \$6  
 CX-2919 Test Lead Adapter, \$7.50  
 CU-406 Impedance Matcher, 500 ohms up, \$7.50  
 CU-408 Impedance Matcher, 70 ohms, \$7.50  
 BNC Cables, 6", \$1.00; 4 feet, \$1.50

TS-403 RF GENERATOR 1.8-4.2 Ghz w/output \$185  
 SG-557 RF GENERATOR 3.8-7.5 Ghz w/output \$215  
 HP-608ER 10-480 Mhz GENERATOR, rack \$395 \$795

## TUBES

All used-checked or subject-to-your test (stt).  
 4-125A (stt) \$32. 4X150A 6v \$22.  
 4X150G coaxial-type (stt) \$23. 6080 \$3.00  
 5881/616G \$2.50 6J56 \$2.50 2/4. 811A \$10.  
 WESTERN ELECTRIC 215A ANTIQUE DETECTOR, very small tube first introduced by WE in 1919; in original WE box for the Navy. W/info \$4.

## TIME-TEMP SIGN PCB'S

SCR/TRIAC CONTROLLER BOARD with seven each 400 V 4 A SCR's and 200 V 6 A triacs. SCR's trigger the triac gates with a 50 m-sec 16 V pulse that holds all triggered triacs "on" until 24 VDC to SCR's is reset. Originally p/o time-temp sign. 6x6 1/2, 1 lb.  
 #ASI-CMC27, w/schematic \$35.00



TRIAC CONTROLLER BOARD w/eight RCA 200 V 6 A triacs (TO-66), isolation/trigger transformer, shift register, and gates which control each triac. P/o time-temp sign. With schematic and 22-pin edge connector. 4 1/2 x 8 1/2, 2 lbs. #ASI-COMP107 \$5.95

LOGIC CARD p/o time-temp sign controller containing IC's 2/555, 741S00, 2/741S08, 5/741S14, 74-LS20, 6/741S32, 2/741S42, 2/741S93, 741S123, 74-LS237, 741S367, 7404, 7417, and DS8830. With schematic. 9-3/8 x 5 1/2 x 1, 1 lbs sh. #ASI-503/00, \$3.95

## TRANSFORMER & DIODES



TRANSFORMER & DIODE ASSEMBLY with Signal 24-4 transformer which has two 12 V 4 amp secondaries.  
 Also two 200 V 40 A diodes, two 300 V 25 A SCR's, and a P&B 120 V 50-60 Hz DPDT relay w/10 A contacts. W/schematic. 10 1/2 x 3 1/2 x 3 1/2, 8 lbs. #ASI-M912VPS, \$12.95

## LS-184 SPEAKER

LS-184/AIC-10 LOUDSPEAKER with AM-492 amplifier. 5" blast-proof speaker is rated 5 watts; 5.5 V input for 1 W output 300-6000 Hz. Input impedance approx 900 ohms. Amplifier uses four 5178 tubes parallel push-pull. Transformer coupled input and output. Requires 27 VDC 150 ma and 170 VAC 30 ma. DPDT switch requires wiring. 7 1/2 x 8 1/2 x 4-1/8, 5 lbs sh. Used, w/schematic, \$22.95



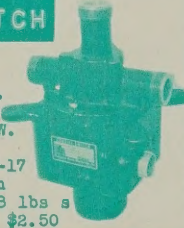
## BALLISTICS CONTROL



SPERRY C-1 BALLISTICS CONTROL, appears to have been part of aircraft bombardier's equipment. Has controls and dials for "Time of Fall," "Trail," "Altitude," "N-S Offset," and "E-W Offset." Also contains selsyns six AY-232, two AY-201, and two Sperry R5663478. Looks like a nice aviation collectors item. 12 x 8 1/2 x 7 1/2, 22 lbs sh. Used, \$22.00

## HIGH POWER SWITCH

HIGH POWER SPDT COAXIAL SWITCH, Thompson-Ramo #C14K20A; rated DC to 5 Ghz. 28 VDC motor drives contact bar. Should be good for 1 KW. Three LR-type connections (mating connectors as on RG-17 not available) and one 7-pin control connection. 6x6 1/2 x 8 lbs sh. Unused, \$32.95; 7-pin conn. \$2.50



## ROBOT GEAR BOX



ROBOT GEAR BOX with two electrically independent 3 VDC motors which are loosely magnetic coupled. One gear has holes with 2 diodes used as optocouplers to sense rotational speed. Has two 3/8" dia splined shafts (48 RPM @ 3 VDC). This plastic gear box could be used for light-duty robot, cart, or animation projects O/a 7 1/2 x 4 1/2 x 2 1/2, 2 lbs. #WD-4955-18, \$3.50 4/311

## AIR VARIABLE CAPACITORS

CARDWELL #MR-260-BD, dual section, 11-260 pf/section; 0.03" gap. 1 1/2 x 1 1/2" dia shaft; o/a 5 1/2 x 1-3/8 x 3, 2 lbs. Unused, \$6.95



CARDWELL #MO-180-BD, dual section, 15-180 pf per section; 0.05" gap. O/a 7x1-3/8 x 3, \$7.95

#SK-048-000389, 3-gang 15-375 pf/sec receiver type. W/1/2" dia adapter shaft; 7x2 1/2 x 3-3/8, \$6

#3330-313, 2-gang 6-16 pf/section; 0.05" gap. Silver-plated with brass tuning gears. 7/8 x 5/16" dia shaft; o/a 4x2-3/8 x 3. Unused \$5.95

#3D9067VEB, 1-section 11-67 pf 0.05" gap. Has three front mount spacers for #6 screws. Shaft 3/8 x 1/2" dia; O/a 3 1/2 x 1-7/8 x 2 1/2. \$3.95

## AC CAPACITORS

MFD	VAC	SIZE	WT.	PRICE
1.3	4000	8 1/2 x 4 1/2 x 3 1/2	7	\$6.50
12.5	360	4-3/8 x 2 1/2 x 2	2	2.00
17.5	330	5 1/2 x 2 1/2 x 1 1/2	2	2.50
18	600	4 1/2 x 4 1/2 x 2 1/2	3	4.00
20	330	4 1/2 x 3 1/2 x 2 1/2	2	3.00
20	550	6 1/2 x 4 1/2 x 2 1/2	4	4.25
25	440	6 1/2 x 3 1/2 x 7/8	3	4.50
48	480	10 1/2 x 4 1/2 x 3 1/2	9	12.00

All unused; buy 10 or more one value, take 20% off price.

## 2 MF 7500 VDC

Cornell-Dubilier  
 #CP70D1ER205K1, 14x 12 1/2 x 4 1/2, 25 lbs. \$20

## TELEPHONE TONE PAD

STROMBERG-CARLSON TONE KEY PAD, can be used for tone control, signaling, and experiments. Each key produces two tone output; characters 0 thru 9, \*, #. Requires 9-15 VDC; with hook-up info. 3-3/8 x 5 1/2 x 1 1/2, 2 lbs sh. #SC-35A3AP, NEW, \$8.95; 2 for \$16.



## MIRRORED REFLECTOR



INFRARED NIGHT VISION REFLECTOR originally used on tanks. 23" x 16" mirrored surface focuses light about 12" above center. Heat created can "smoke" wood on sunny day. 4 1/2" fall from extreme perimeters to center. Surface may have scratches. Nice experimenter's item. 12 lbs, used, \$25.

## ALTEC TRANSISTOR AMP

ALTEC LANSING 456B TRANSISTOR AMPLIFIER for voice communications or as part of telephone repeater system; response 200-6000 Hz. -22 db max power input; +17 db max power output. Input variable -2 db to 39 db. Simplex 100 ma max; unbalanced 5 ma. Input/output impedance 600 ohm; 24/48 VDC. 1 1/2 x 1 1/2 x 5, 2 lbs. \$4 4/32.



## 5DEP31 FLAT-FACE CATHODE RAY TUBE CRT

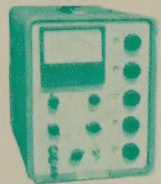
5DEP31 FLAT-FACE CATHODE RAY TUBE CRT. 5 dia. Used in some Heath oscilloscopes; looks like substitute for 5U1 (needs wiring change). Typical voltages: -1400 V, 6.3 V fil., +150 VDC vertical plate, +180 VDC horiz-plate. W/diagram. 1 1/2 x 5 1/2, 5 lb. 5DEP31, NEW \$22. 12-pin socket f/5DEP31 \$2.50  
 3RPLA flat-faced, NEW \$40

## SELSYNS

2J1G1 SELSYN CONTROL TRANSFORMER, 57.5

VAC 400 Hz; usable in pairs for remote position indication and light duty turning applications. Operable from 24 V 60 Hz with good resolution and torque. 1/2" long shaft tapered 1/4", then threaded 1/4". O/a 4 1/2 x 2 1/2 dia; 2 lbs. #2J1G1, less connector cap \$7.50; w/cap \$9.50  
 MK II SIZE 6 SELSYNS, 115 VAC 60 Hz; sold in mated pairs for rotational and position-indication uses. 7 1/2 x 4 1/2 dia, 12 lbs/pair. Used-checked, various manufacturers, \$45/pair  
 SIZE 5 SYNCHRO DIFFERENTIAL RECEIVER, 115 VAC 60 Hz; used to show the sum or difference of two angular motions. 5 1/2 x 3 1/2 dia, 5 lbs. \$10.  
 OTHER SELSYNS AVAILABLE. WRITE YOUR NEEDS.





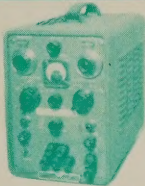
### FLUKE 803D

FLUKE 803D AC-DC DIFFERENTIAL VOLTMETER, 0.1 to 500 volts AC-DC. Designed accuracy:  $\pm 0.2\%$  (AC),  $\pm 0.05\%$  (DC). AC response 20 Hz to 10 KHz. Requires 115 VAC 60 Hz. 12 $\frac{1}{2}$  x 9 $\frac{1}{2}$  x 16, 35 lbs sh wt. Used, reparable, \$59.50

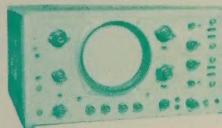
### KLYSTRON POWER SUPPLY

#### HEWLETT-PACKARD 715A KLYSTRON

POWER SUPPLY for low power klystron tubes. Output -250 to -400 VDC regulated 30 to 50 ma for the beam electrodes and 0-900 VDC regulated for the reflector electrode. Reflector volts can be modulated by internal 1 KHz square wave or externally; square wave modulation adjustable up to 120 V peak-to-peak. Frequency modulation for 60 Hz sine wave 0-350 V p-p. Requires 115/230 VAC 50-60 Hz. 7 $\frac{1}{2}$  x 11 $\frac{1}{2}$  x 13 $\frac{1}{2}$ , 26 lbs sh. Used, with output cable, \$49.50; Less, output cable, \$39.50



### DUAL BEAM SCOPE



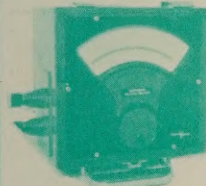
HEWLETT-PACKARD 132A DUAL-BEAM SCOPE, DC to 500 KHz vertical bandwidth; single or dual beam use for X-Y operations. Time base: 1 u-sec to 5 sec/cm in 21 ranges (1-2-5 sequence) plus vernier to 12.5 sec/cm. Magnifier X2-5-10-20-50. Vertical sensitivity 100 uv to 20 v/cm in 17 ranges; vernier to 50 v/cm. Horizontal: 300 KHz bandwidth and sensitivity 5 mv to 2 v/cm in nine ranges. Calibrator 350 Hz square wave, 0.5 v or 0.5 mv. Has 5" CRT display. 9 $\frac{1}{2}$  x 16 $\frac{1}{2}$  x 18 $\frac{1}{2}$ , 50 lbs sh. Used, reparable, \$165.00 Checked, \$215. Manual, \$12 w/scope purchase.

HP-122AR DUAL-TRACE SCOPE, DC to 200 KHz; 10 mv/cm sensitivity. 5" CRT display; rackmount. 7 $\frac{1}{2}$  x 19 $\frac{1}{2}$  x 43 lbs sh. Used-reparable, \$145. Checked, \$195. Manual, \$10 w/scope purchase.

### TEST OSCILLATOR

#### HEWLETT-PACKARD 650A TEST OSCILLATOR for 10 Hz to 10 Mhz in six ranges.

Output 30 mv to 30 volts; 600 ohm impedance. Output attenuator 0-50 db in 10 db steps, flat  $\pm 1$  db throughout range. 10 $\frac{1}{2}$  x 19 $\frac{1}{2}$  x 15, 48 lbs sh. Used, reparable, \$95.00; Cabinet for 650A, add \$10. Manual, \$8.50 w/purchase.



SENSITIVE RESEARCH ESD ELECTROSTATIC VOLTMETER, 0-4 KV AC-DC on 4 $\frac{1}{2}$ " wide mirrored scale. Designed accuracy 1% of full scale; maximum overload 25%. Has zero set; in portable case with cover. 9 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 7 $\frac{1}{2}$ , 12 lbs sh wt. Used, checked, \$60.

#### JERROLD 900A SWEEP GENERATOR, covers 0.5 to 1200 Mhz in two ranges.

Sweep width: 0.5-400 Mhz. Has built-in RF detector and uses two 5675 tubes in the oscillator section. 10 $\frac{1}{2}$  x 22 $\frac{1}{2}$  x 14, 65 lbs sh. Used-reparable, \$135.



#### BOONTON 202B FM SIGNAL GENERATOR, 54-216 Mhz

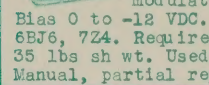
AM-FM in two bands; 60 lbs sh wt. \$165.00  
BOONTON 207E UNIVERTER, adds 100 KHz to 50 Mhz range to 202B; rackmount, \$45.00  
BALLENTINE 320A TRUE RMS VTVM, \$65.00  
GENERAL RADIO 544B MEGOHM BRIDGE, \$125.00  
HEWLETT-PACKARD 310A WAVE ANALYZER, \$425.00  
H-P 739AR FREQUENCY RESPONSE TEST SET, 300 KHz-10 Mhz in three ranges, \$115.00  
H-P 740A DC STANDARD DIFFERENTIAL VOLTMETER,  $\pm 0.01\%$  designed accuracy to 1000 VDC, \$425.  
PHAZOR 100A PHASE SENSITIVE NULL METER, 30 Hz to 10 KHz; 8 to 120 V reference, \$60.00

### SWEEP GENERATORS

#### KAY 111A SWEEP GENERATOR, 10-950 Mhz in two bands. Sweep width 50 KHz-40 Mhz continuously variable. Sweep rate variable around 60 Hz; locks at line frequency. RF output: 0.15 Vrms (Hi) or 0.07 Vrms (Lo) into 70 ohm. Sweep output approx. 20 V regular sawtooth. Has micrometer frequency readout and uses two 2K25 tubes in the oscillator. 9 $\frac{1}{2}$ x 19 $\frac{1}{2}$ x 17, 45 lbs sh. Used-reparable w/good 2K25's, \$65.

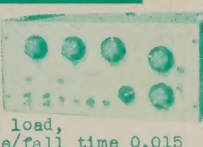


#### SG-93/URM-75 SWEEP GENERATOR, covers 5-220 Mhz in two bands; marker range in six bands. Sweep deviation upto 12 Mhz variable; fixed 60 Hz sweep rate. 10 Mhz crystal calibrator can be modulated by 600 Hz audio signal. Bias 0 to -12 VDC. With tubes 5/6BQ7, 12AU7, 6BJ6, 7Z4. Requires 115 VAC 60 Hz. 10 $\frac{1}{2}$ x 15 $\frac{1}{2}$ x 8, 35 lbs sh wt. Used, reparable, \$45.00 Manual, partial repro, \$8.50 w/set purchase.

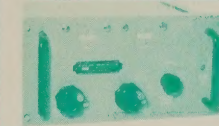


### PULSE GENERATOR

#### RUTHERFORD B7F PULSE GENERATOR with 2 Hz to 2 Mhz repetition rate in five bands. Pulse delay: 0.0 to 10K u-sec. Width: 0.05 to 10K u-sec. Pulse output 50 V min. into 50 ohm load, positive or negative. Rise/fall time 0.015 u-sec. Sync pulse out 10 V min., 0.05 u-sec width; 0.03 u-sec risetime, positive polarity. Requires 115 VAC 50-60 Hz. 8 $\frac{1}{2}$ x 19 $\frac{1}{2}$ x 13, 50 lbs sh wt. Used, reparable, \$95.00



### 100-225 MHZ AMPLIFIER



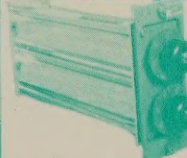
AM-912/GRC AMPLIFIER MULTIPLIER which was designed to plug into T-302 transmitter to cover 100-225 Mhz FM range. Used 4X150A as P-A tube. Has separate grid and plate tuning and amp output coupling. 12 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 14, 24 lbs sh wt. Used, \$75.00  
AM-1180/GRC 50-100 Mhz, one 4X150A, \$49.50  
AM-915/GRC, 225-400 Mhz, 4X150A & G, \$55.00  
AM-2537/TRC, 790-915 & 840-925 Mhz, \$59.50

#### AM-913/GRC AMPLIFIER-CONVERTER

plug-in unit used with R-417 receiver to cover 100-225 Mhz FM. Continuous tuning of RF and oscillator; 30 Mhz I-F. Tubes 5670 and 6J4. 7 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 9 $\frac{1}{2}$ , 12 lbs sh. Used, \$39.95

Other AMPLIFIER-CONVERTERS similar to above:  
AM-1179/GRC, 50 to 100 Mhz, \$39.50  
AM-914/TRC, 225-400 Mhz; same unit discussed in Grove's 10/80 CQ article. Used, \$34.95  
AM-1177/GRC, 400 to 600 Mhz; used, \$44.50  
AM-3203A/TRC, 1.35 to 1.875 Ghz, used, \$54.50

### BANDPASS CAVITIES



FULL-LENGTH TWIN-CAVITY BANDPASS FILTERS, 9-1/8" length; gold-plated. Similar to filters described in WAXE's article in 2/80 Ham Radio Magazine. 8 lbs sh wt; unused, \$24.95 each.  
F-238/U (50-58.5 Mhz)  
F-239/U (58.5-67 Mhz)  
F-242/U (84-92.5 Mhz)  
F-243/U (92.5-100 Mhz)

#### SHORT-LENGTH twin-cavities, unused, \$17.50 ea

F-195/U (163-184 Mhz) F-201/U (284-314 Mhz)  
F-196/U (184-205 " ) F-202/U (314-344 " )  
F-199/U (224-254 " ) F-203/U (344-374 " )  
F-200/U (254-284 " ) F-204/U (374-404 " )

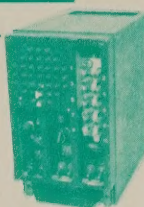
#### ALUMINUM CASE with RACK for six of the above filters.

Case has hasp fasteners and side handles. 18 $\frac{1}{2}$  x 20 $\frac{1}{2}$  x 12 $\frac{1}{2}$  D, 35 lbs. \$25.00  
CY-1344 CASE only, \$17.50  
FILTER RACK only, \$12.50



### BC-603 RECEIVER

BC-603 FM RECEIVER, designed for 20-27.9 Mhz using ten push-button preset channels. However, units have been internally converted to 34 to 50 Mhz range. Built-in speaker; requires 220 VDC 80-ma, 12/24 VDC. P/o SCR-508-528. 11 $\frac{1}{2}$  x 6 $\frac{1}{2}$  x 12 $\frac{1}{2}$ ; 40 lbs sh wt. Used, less dynamotor, \$54.50; with DM-34 12 VDC dynamotor, \$59.50.



BC-683 RECEIVER, same as BC-603 except 27 to 38.9 Mhz (not converted); p/o SCR-608-628. Used, less dynamotor, \$55; w/DM-34, \$60.00  
BC-604 TRANSMITTER, companion to BC-603; 70 lbs sh. Unused, less dynamotor, \$25.00  
DM-35 12 VDC DYNAMOTOR for BC-604, unused \$20  
FT-237 MOUNT for SCR-508-528 or -608-628; 60 lbs sh wt. Unused, \$28. CO-278 cable 8', \$4.  
MANUALS for SCR-508-528 or 608-628, \$7.50 ea.

### PP-804 POWER SUPPLY



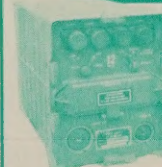
PP-804 AC POWER SUPPLY, designed to power T-208-278-417 transmitters from 115/230 VAC 50-60 Hz input. Output: 500 VDC 250 ma, 225 VDC 45 ma, 1.25 VDC 1 amp, 1.25 VDC 2 amps, -25 VDC 5 ma, 6 VDC 300 ma, 6 VAC 900 ma, and 6 VAC 2.1 amps. 8 $\frac{1}{2}$  x 7 $\frac{1}{2}$  x 14 $\frac{1}{2}$ ; 46 lbs sh. Used, \$45.00; Manual, partial repro \$8.50 Schematic only, \$2. Mating connector, \$2.50

### C-845 RADIO CONTROL

C-845/U RADIO CONTROL, used with R-394-257 receivers and T-208-278-417 transmitters. Contains three tube microphone amp with line level meter which allows the signal to be adjusted to modulate the transmitter. Also has heavy duty 4" speaker for monitoring a receiver and tone generator for signaling purposes. Controls for intercom, mic level, and speaker volume and UG-77 plug. 600 ohm input impedance. Unit includes PP-846 AC power supply which mounts inside. Requires 115/230 VAC 50-60 Hz. 8 $\frac{1}{2}$  x 13 $\frac{1}{2}$  x 13 $\frac{1}{2}$ ; 40 lbs sh wt. Used, \$49.50; schematic, \$2.00



### PP-109 POWER SUPPLY



PP-109/GRC 12 VDC POWER SUPPLY for RT-66-67-68/GRC transceivers. Provides all the necessary voltages for these transceivers from a 12 VDC 11.5 amp input. 7 $\frac{1}{2}$  x 9 $\frac{1}{2}$  x 13, 39 lbs sh wt. Used, \$39.50 Gov't-reconditioned, \$49.50

### AUDIO AMPLIFIER

AM-864 AUDIO FREQUENCY AMPLIFIER, peak-11-mit unit for AM and FM broadcast. Also may be used in recording and sound systems requiring automatic regulation of program level. Input and output impedance 600 ohms-ct; gain 36 db max. Distortion less than 2% @ 400, 1K, and 5K Hz. Noise level 40 db below 6 MW. Response flat within 1 db from 100 to 5000 Hz. With tubes 2/6SK7, 6SQ7, 6SN7, 5Y3. Requires 115/230 VAC 50-60 Hz. 7 $\frac{1}{2}$  x 19 $\frac{1}{2}$  x 8 $\frac{1}{2}$ , 32 lbs sh. Used-not checked, \$24.95



### DC TO AC CONVERTER

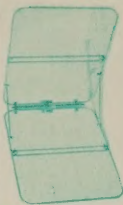


PP-68 VIBRATOR POWER SUPPLY provides 100 to 110 VAC 60 Hz 15 or 50 watt output from 6 VDC 6/13 amps (15W/50W) or 12 VDC 3/6.5 amps (15W/50W). With 66" battery cable. 9 $\frac{1}{2}$  x 11 $\frac{1}{2}$  x 8 $\frac{1}{2}$ , 34 lbs sh wt. Used, checked, \$22.95

**MINIMUM ORDER \$5.00**



## CORNER REFLECTOR



AS-52/TRC-8 90° CORNER REFLECTOR, two 36"x30" planes at right angles collapse and fold into 30x23x8 package. Mounts on 2" dia mast; 18 lbs. Unused, \$14.95 #2A288A-35 HALF-WAVE DIPOLE for AS-52; 230-250 Mhz. 50 ohm feed; N connection. 4 lbs. Used, \$4.95

AS-756/TRC TWO 3-ELEMENT YAGI ARRAY for 40-100 Mhz, 5 db gain; vertical or horizontal polarization. Consists of array spacer bar, two antenna booms, and 12 each long, short, and subassembly antenna elements. Component lengths adjustable according to frequency: spacer 58"-112", booms 72", and elements 40"-58". Matching transformers are built-in to each boom. Also included is 10x7x20 transit case and enough spare components to make third yagi. 185 lbs sh. Unused, \$150.00



CY-2595 TRANSIT FRAME, designed to hold AT-903 antenna horn, but looks as if frames can be stacked and bolted together to a tower base. Measures 38 1/2"x30 1/2"x30 1/2"; 35 lbs. Must be shipped via bus or truck-No UPS. Used, \$14.00

## LOOP ANTENNAS

MN-24C LOOP ANTENNA, 18" dia loop designed to be used with MN-26-Series 150-1750 KHz receivers. Loop base contains coil with center tap and is enclosed in electrostatic shield. 10 lbs sh; Unused.

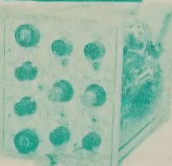
MN-20E LOOP ANTENNA, same as MN-24 except 9" diameter. 7 lbs sh. Unused.

MN-52H AZIMUTH CONTROL, has spin knob for tuning MN-20 or -24 when interconnected with MC-124 spline. 360° azimuth indicator pointer moves simultaneously as the loop is rotated. Includes connector for 28 V on-off lamp. 5 1/2"x3 1/2"x1 1/2", 3 lbs. Unused, \$6.95; MC-124 20" lg \$1.50

MN-24 \$19.95  
MN-20 \$14.95

## TEKTRONIX DUAL TRACE

TEKTRONIX TYPE 82 DUAL TRACE SCOPE PLUG-IN, DC to 80 Mhz response for 580-series mainframes. Risettime less than 4.5 n-sec. Deflection factor 100 mv to 20 v/cm in eight calibrated steps 1-2-5 sequence; to 40 v/cm uncalibrated. 8 lbs. \$175.



TEKTRONIX CA DUAL-TRACE PLUG-IN for 530-, 540 and 550-Series scopes; 7 lbs. Used, \$110.00

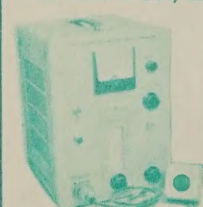
Other TEK 530/540/550 series plug-ins, used: 53/54K Fast-rise, \$50. M Four-Trace, \$185.

Q Transducer and Strain Gage, \$175.00  
W High-Gain Differential & Comparatr \$185.

2B67 Time Base for 560-series scopes, \$100.  
5T3 Timing Unit for 661 sampling, \$125.00

NELSON ROSS PSA014 Spectrum Analyzer plug-in fits TEK 540/550 series scopes; 1 KHz-2 Mhz. Dispersion 10-600 KHz; 1-8 KHz resoluti \$250

TEKTRONIX 453 SCOPE, dual trace DC to 50 Mhz; 0.1 usec-5 sec/div time base w/delay, \$950.



TEKTRONIX 190A CONSTANT-AMPLITUDE SIGNAL GENERATOR with 190A attenuator unit; produces sine waves at constant amplitude in the 350 KHz to 50 Mhz range. Six bands; output continuously variable over entire range. Also 50 KHz position variable over narrow band. Output amplitude variable from 40 mv to 10 v peak-to-peak. 190A attenuator attenuates 0.1, 0.25, 0.5, 1, 2.5, 5, and 10 at nominal impedance of 52 ohms. Requires 115/230 VAC 50-400 Hz. 9 1/2"x13 1/2"x11 1/2"; 30 lbs sh wt. Used, repairable, \$145. Checked, \$165.00

## CV-89 FS CONVERTER



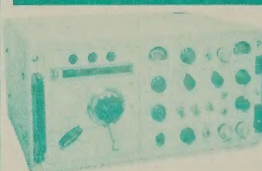
CV-89/URA-8 FREQUENCY SHIFT CONVERTER, audio frequency conversion type with 2BFL CRT. Shifts 10-200 Hz @ 1 KHz center frequency; 200-1000 Hz @ 2550 c-f. Maximum keying speed: 60 wpm for single channel. Teletype output 60 ma DC loop @ 70 V. Two AF inputs, one for narrow one for wide shift; each 600 ohms ct, 60 uW to 60 mW input power. Requires 115 VAC 60 Hz. 5 1/2"x17"x21, 55 lbs sh wt. Used-repairable, \$85. Flanges for rackmount use, \$5 additional. Manual, partial repro, \$10. Power conn., \$3.

## CV-116/URR FSK CONVERTER

for use with receivers having final IF's from 450 to 510 KHz such as R-220, R-388, R-390A and SP-600. Converts frequency-shift signals into DC pulse that key the energizing circuits of teleprinters; translates at 100 dot Hz/sec. Unit can be used with two receivers. Channel A IF center frequency 50 KHz; channel B, 29.3 KHz. Input FS range 150-1000 Hz, 100 uV minimum; 50 ohm impedance. Separate control unit required between CV-116 and teleprinter to match output-input signals. Requires 115 VAC 60 Hz. 8 1/2"x17"x18; 80 lbs sh. Used, repairable, \$125. Manual, partial, \$10.



## 14 TO 600 KHZ RECEIVER



RI134/WRR-3 LOW-FREQUENCY RECEIVER, 14-600 KHz AM-CW-FS in five bands using mechanical digital tuning: 14-30 KHz (Band I), 30-63 (II) 63-133 (III), 133-283 (IV), and 283-600 KHz (V). Bands I and IV have 60 KHz 1st I-F; 200 KHz 2nd. Other bands single 200 KHz I-F. Calibrate points every 10 KHz. Output impedance: 600 ohms. Input: 50 ohms. Controls for BFO, broad-sharp I-F and A-F selectivity, Antenna Compensator. With tubes 6AN5, 6AU6, 4/6C4, 3/5725, 5/5749, and 5751. Requires 115 VAC 50-60 Hz or 400 Hz. 8 1/2"x17"x16 1/2", 80 lbs sh wt. Used, repairable, \$215.00; Checked, \$295.00. Schematic pack, \$3 w/set purchase. MANUAL for WRR-3, partial reproduction, \$15.

## 2400-3400 MHZ WAVEMETER

TS-117/QP WAVEMETER TEST SET designed for frequency measurements between 2400 and 3400 Mhz. Used to measure antenna radiation, local oscillator frequencies, relative field strength, and relative output. Q from 1800 to 2000. Includes 50 u-ammeter, sensitivity vernier, and frequency micrometer with conversion tables. Accessories AS-23 directive antenna, UG-183 cable, UG-57 and UG-131 adapters and transit case. Uses N connectors. 5x6x3, 15 lbs sh. Used, complete, \$39.95 Less accessories, \$29.95



## COLLINS 180L-3

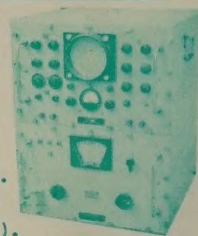


COLLINS 180L-3 AUTOMATIC ANTENNA COUPLER, usable with transceivers in the 2-25 Mhz range, 50-180 watts. Automatically resonates an antenna to a transceiver's frequency and couples the RF signal between the transceiver and antenna. Also transmits and receives antenna to receiver or receiver section after the transmitter is unkeyed. Coupler has 7-970 pf 3 KV vacuum variable capacitor and variable ribbon 32 uHY inductor; also smaller roller inductor and SWR meter circuit. Requires 28 V-DC 3 amps, 250 or 400 VDC 35 ma, and 115 VAC 400 Hz 20 VA. 10 1/2"x7 1/2"x11 1/2", 24 lbs sh wt. Used, \$109.50; Manual, partial repro, \$10.

## SPECTRUM ANALYZERS

### LA-18A SPECTRUM ANALYZER

with 5ADP7 CRT display; covers 10 Mhz to 18 GHz in bands 10-150, 150-350, 350-1000 Mhz, 1-2, 2-4, 4-8, and 8-16 GHz. Displays signal amplitude (vertical) vs. frequency (horizontal); square law, linear, or log deflection. Resolution: 500 KHz-5 Mhz adjustable (10-50 Mhz), 500 KHz-25 Mhz (50 Mhz up). Sensitivity for 2:1 signal plus noise-to-noise ratio @ 0.5 Mhz spectrum width: 60 db (10-1000 Mhz), 85 db (1-2 GHz), 75 db (2-4 GHz), 50 db (4-16 GHz). IF attenuation 0-60 db in 6 db steps; sweep repetition 0.5-30 Hz. Calibrator -15 Mhz marker. Requires 115 VAC 50-400 Hz. 25 1/2"x19 1/2"x18 1/2", 175 lbs sh wt. Used, repairable, \$375. Manual, partial, \$10.



POLARAD SA-84WA SPECTRUM ANALYZER, covers 10 Mhz to 63 GHz in ten bands; external attenuators (not available) required for use above 13.5 GHz. Dispersion: 1 KHz (10-250 Mhz), 1 Mhz above 250 Mhz; 5" CRT display. 19 1/2"x17 1/2"x28, 160 lbs. Used-repairable, less access., \$525. Operator's book, par-repro \$10.

## ANTI-JAMMING TRAINERS

### AN/ULT-T2 (15X12) X-BAND INTERFERENCE TRAINER,

a low power transmitter in the 8500-9600 Mhz range designed to train radar operators in anti-jamming techniques. Unit can be manually tuned and modulated by a sine or square wave, pulse, noise, or modulation from an external source. Has controls for CW, 5-16 Mhz/sec sweep, 250-500 -1100 Mhz sweep sector, percent modulation, and pulse width 1-5 usec. Frequency modulation 15 Hz-15 KHz variable and fixed 50 or 100 KHz. Audio output impedance 600 ohms. Designed to be used within 50 feet of radar. Uses 2K45 klystron. Requires 115 VAC 50-400 Hz; with antenna horn and transit case. 13 1/2"x19 1/2"x19 1/2", 110 lbs sh wt. Used, \$99.50



AN/ULT-T4 (15X18) INTERFERENCE TRAINER, similar to ULT-T2 except covers L-Band (1220-1350 Mhz) and uses 2C36 klystron. With antenna horn and transit case. 17 1/2"x23 1/2"x18 1/2", 100 lbs sh. Used, \$105.00

MANUALS for ULT-T2 or ULT-T4, \$10 each w/set.

## TRC-77 TRANSCEIVER

### RT-654A/TRC-77 BACK-PAK TRANSCEIVER

covering 3 to 8 Mhz in six preset channels. Receives AM or CW; transmits CW only. Output: 10-14 watts, 300 wpm max. keying. Transistorized except for 2E24 power amp tube. Has BFO, jack for key, and UG-229 plug. Designed for use with BB-447 nicad battery pack (not available). Requires 12 VDC 3.75 amps. 4 1/2"x10 1/2"x10, 15 lbs sh. Used, repairable, \$75.



VRC-to-GRC CABLE ADAPTER with U-229 and U-78 plugs. Allows use of GRC-series audio accessories H-33/PT handset and IS-166 speaker with VRC-12, PRC-25-77 equip; 10" lg. \$8.95

## RF OUTPUT NETWORK



OUTPUT NETWORK ASSEMBLY from ART-13 transmitter; originally used with 200 pf variable capacitor (G125) and L112 variometer to provide Pi and L section matching of 813 tube over 3-18 Mhz to aircraft antennas 17-60 ft long. Includes 57 uHY coil tapped 2-6-15-24-34 uHY, coil tap switch, and 7-Centralab 850-type HV capacitors 25 pf, 3/50 pf, & 3/67 pf. 5 1/2"x8 3/4", 7 lb #ONET/ART-13, \$14. #L112/ART-13 variometer \$6